

## REMARKS

Claims 1-30 are pending and under consideration.

Claims 12-15 and 24-27 are allowed. Applicants thank the Examiner for the indication of allowable subject matter.

**Item 3: Rejection of claims 1-11, 16-23, and 28-30 under 35 U.S.C. §103(a) as being unpatentable over Hum et al. (U.S.P. 6,714,133) in view of Rilling (U.S.P. 6,564,044)**

Claims 1-11, 16-23, and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hum in view of Rilling. The rejection is traversed.

As provided in MPEP §2143.03 "To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." Applicants submit that features recited by each of the independent claims are not taught by the cited art, alone or in combination.

Independent claim 1 recites an input system including "an information generation part generating input information based on a given input operation; a transmission part substantially simultaneously transmitting a first signal and a second signal generated by having a plurality of different carrier frequencies modulated with the same input information (emphasis added)." Independent claim 16 has a similar recitation. Independent claim 30 recites a device including "a transmission part substantially simultaneously transmitting the same input information by a plurality of carrier frequencies (emphasis added)."

The Examiner asserts that Hum teaches:

a transmission part (6) substantially simultaneously transmitting a first signal and a second signals (see signals 17a-17c) generated by having a plurality of different carrier frequencies modulated with the same input information (see interrogator 12 may generate signals of different radio frequencies, see col. 8, lines 21-24, col. 10, lines 35-38).

(Action at page 2).

However, the Examiner also concedes that Hum does not teach "a simultaneously transmitting a first signal and a second signal with the same input." (Action at page 3).

Applicants submit that Hum does not teach substantially simultaneously transmitting a first signal and a second signal or with the same timing. By contrast, Hum merely teaches that at one timing, an interrogation signal for the transponder 18a is transmitted through the ports 16a through 16n using a certain frequency, and at the next timing, an interrogation signal for the next transponder 18b is transmitted through the ports 16a through 16n using a different frequency, thereby distinguishing between the transponders 18a and 18b.

For example, Hum teaches (see, for example, col. 5, lines 20-40) transmitting to each of

the transponders 18a through 18n in order and at a different timing, through the ports 16a through 16n and further teaches (col. 8, lines 21-24) that at this point "the interrogator may generate signals of different radio frequencies," that are employed for different interrogation signals for the corresponding transponders 18a through 18n so as to "distinguish between transponders" (see for example, col. 8, lines 19-20). In addition, Hum teaches that (col. 8, lines 27-33) "interrogation signals for the different transponders are sent in sequence or in some other manner that permits them to be distinguished from one another (emphasis added)."

That is, by contrast Hum merely teaches a transmitting of interrogation signals of different frequencies are at different timings.

While, the Action concedes that Hum does not teach a simultaneously transmitting a first signal and a second signal with the same input, the Examiner asserts that Rilling teaches "a first and a second signal(s) pairs are transmitted simultaneously from the same antenna" and it would have been obvious:

to implement the transmitting system having a first and a second signals are transmitted simultaneously from the same antenna as taught by Rilling into the information generation part generating input information based on a given input operation of Hum et al. for producing the claimed invention because this would provide the receiving antenna 24 collects all the multipath components, the characteristics of each pair are preserved as if they were transmitted alone.

(Action at page 3).

Applicants submit that Fig. 2 of Rilling teaches (see, col. 3, starting at line 29) a configuration where the same first and second signal pairs are transmitted simultaneously by multipath transmission. That is, each signal pair may be considered as having the same information in that each signal pair is composed of the same first and second signals.

Applicants submit that such "a signal pair" does not teach two independent signals, i.e., "a first signal" and "a second signal" according to the present invention. By contrast, according to Rilling it is not the signal pair, but the individual first and second signals that are generated by frequency modulation.

Rilling does not teach the first and second signals are generated by having different carrier frequencies modulated with the same input.

By contrast, Rilling teaches (see, for example, FIG. 2) that the first and second signals have different information items since they are generated in different signal generators 2 and 4 and are separated in a separator 20 to be received by different receivers 12 and 14. That is, Rilling merely teaches that first and second signals may be generated by having different carrier frequencies modulated.

Thus, even if Hum and Rilling are *arguendo* combined, it is not possible to achieve the feature of "substantially simultaneously transmitting a first signal and a second signal generated by having a plurality of different carrier frequencies modulated with the same input information".

Further, Applicants submit that one or ordinary skill in the art would not have modified Hum with Rilling.

In addition, advantages are achieved by an embodiment of the present invention are not obvious from a mere combination of Hum and Rilling. For example, by "substantially simultaneously transmitting a first signal and a second signal generated by having a plurality of different carrier frequencies modulated with the same input information," as described in the specification an "output signal of the reception circuit 12 is approximately twice as strong as a signal obtained by demodulating a modulated Wave of a single carrier frequency" (see, page 10, line 36 to page 11, line 3) and "signals can be received efficiently with weaker electric field strength." (see, page 11, lines 10-11).

#### Summary

Since features recited by 1-11, 16-23, and 28-30 are not taught by the cited art, alone or in combination and *prima facie* obviousness is not established, the rejection should be withdrawn and claims 1-11, 16-23, and 28-30 allowed.

#### CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

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By: Paul W. Bobowiec

Paul W. Bobowiec  
Registration No. 47,431

1201 New York Avenue, NW, 7th Floor  
Washington, D.C. 20005  
Telephone: (202) 434-1500  
Facsimile: (202) 434-1501